

What is Claimed is:

1. A stub search loading system for, in executing
2 remote method invocation from a plurality of clients to
3 a server, downloading a stub necessary in a request
4 source client from the server, wherein
5 the request source client comprises stub
6 search means for sending a stub request formed from a
7 stub name and client identifier to the server and
8 receiving a stub returned from the server, and
9 the server comprises a stub search interface
10 for, in response to the stub request from the request
11 source client, returning to the request source client
12 the stub appropriate for a runtime environment of the
13 request source client on the basis of the designated
14 stub name and client identifier.

2. A system according to claim 1, wherein
2 the server further comprises a stub set in
3 which a stub to be used together with a skeleton used in
4 the server at the time of remote method invocation from
5 the request source client is prepared for each of types
6 of the clients having different runtime environments,
7 and
8 upon receiving the stub request from the
9 request source client, said stub search interface
10 searches said stub set for the corresponding stub on the

11 basis of the designated stub name and client identifier
12 and returns the stub to the request source client.

3. A system according to claim 1, wherein
2 the server further comprises stub generation
3 means for generating, for each of types of the clients
4 having different runtime environments, a stub to be used
5 together with a skeleton used in the server at the time
6 of remote method invocation from the request source
7 client, and
8 upon receiving the stub request from the
9 client, said stub search interface returns to the
10 request source client the stub appropriate for the
11 runtime environment of the request source client, which
12 is generated by said stub generation means on the basis
13 of the designated stub name and client identifier.

4. A system according to claim 2, wherein
2 the server further comprises stub generation
3 means for generating, for each of types of the clients
4 having different runtime environments, a stub to be used
5 together with a skeleton used in the server at the time
6 of remote method invocation from the client, and
7 when the corresponding stub is not present in
8 said stub set, said stub search interface returns to the
9 request source client the stub appropriate for the
10 runtime environment of the request source client, which

11 is generated by said stub generation means on the basis
12 of the designated stub name and client identifier.

5. A stub search loading method of, in executing
2 remote method invocation from a plurality of clients to
3 a server, downloading a stub necessary in a request
4 source client from the server, comprising the steps of:
5 sending a stub request formed from a stub name
6 and client identifier from the request source client to
7 the server;
8 upon receiving the stub request, returning
9 from the server to the request source client a stub to
10 be used together with a skeleton used in the server at
11 the time of remote method invocation from the request
12 source client, on the basis of the designated stub name
13 and client identifier; and
14 receiving, at the request source client, the
15 stub transmitted from the server.

6. A method according to claim 5, wherein the
2 return step comprises the steps of
3 in the server on the basis of the designated
4 client identifier, selecting one of stub sets in which a
5 stub to be used together with a skeleton used in the
6 server at the time of remote method invocation from the
7 request source client is prepared for each of types of
8 the clients having different runtime environments,

9 selecting the stub having the designated stub
10 name from the selected stub set, and
11 transmitting the selected stub from the server
12 to the request source client.

7. A method according to claim 5, wherein the
2 return step comprises the steps of
3 in the server on the basis of the designated
4 stub name and client identifier, generating a stub to be
5 used together with a skeleton used in the server at the
6 time of remote method invocation from the request source
7 client, and
8 transmitting the generated stub from the
9 server to the request source client.

8. A method according to claim 6, wherein the
2 return step comprises the steps of
3 in the server, when a stub cannot be selected
4 from the stub set, generating a stub to be used together
5 with a skeleton used in the server at the time of remote
6 method invocation from the request source client on the
7 basis of the designated stub name and client identifier,
8 and
9 transmitting the generated stub from the
10 server to the request source client.

9. A server apparatus for providing a stub

2 necessary in executing remote method invocation to a
3 request source client in response to a stub request from
4 the client, comprising:

5 a stub search interface for, in response to
6 the stub request from the request source client,
7 returning to the request source client the stub
8 appropriate for a runtime environment of the request
9 source client on the basis of the designated stub name
10 and client identifier.

10. An apparatus according to claim 9, wherein
2 said apparatus further comprises a stub set in
3 which a stub to be used together with a skeleton used at
4 the time of remote method invocation from the request
5 source client is prepared for each of types of clients
6 having different runtime environments, including the
7 request source client, and

8 upon receiving from the request source client
9 the stub request formed from the stub name and client
10 identifier, said stub search interface searches said
11 stub set for the appropriate stub on the basis of the
12 designated stub name and client identifier and returns
13 the stub to the request source client.

11. An apparatus according to claim 9, wherein
2 said apparatus further comprises stub
3 generation means for generating, for each of types of

4 clients having different runtime environments, including
 5 the request source client, a stub to be used together
 6 with a skeleton used at the time of remote method
 7 invocation from the request source client, and
 8 upon receiving the stub request from the
 9 client, said stub search interface returns to the
 10 request source client the stub appropriate for the
 11 runtime environment of the request source client, which
 12 is generated by said stub generation means on the basis
 13 of the designated stub name and client identifier.

12. An apparatus according to claim 10, wherein
 2 said apparatus further comprises stub
 3 generation means for generating, for each of types of
 4 clients having different runtime environments, including
 5 the request source client, a stub to be used together
 6 with a skeleton used at the time of remote method
 7 invocation from the client, and
 8 when the corresponding stub is not present in
 9 said stub set, said stub search interface returns to the
 10 request source client the stub appropriate for the
 11 runtime environment of the request source client, which
 12 is generated by said stub generation means on the basis
 13 of the designated stub name and client identifier.

13. A client apparatus for downloading a stub
 2 necessary in a client in executing remote method

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3 invocation from a server, comprising:
4 stub search means for transmitting a stub
5 request formed from a stub name and client identifier to
6 a server having a stub search interface for, in response
7 to the stub request from the client, returning to the
8 request source client the stub appropriate for a runtime
9 environment of the request source client on the basis of
10 the designated stub name and client identifier, and
11 receiving the stub returned from the server apparatus in
12 response to the stub request.

14. An apparatus according to claim 13, wherein
2 said apparatus further comprises a stub set in
3 which a stub to be used together with a skeleton used in
4 the server apparatus at the time of remote method
5 invocation from the request source client is prepared
6 for each of types of clients having different runtime
7 environments, including the request source client, and
8 upon receiving from the request source client
9 the stub request formed from the stub name and client
10 identifier, the stub search interface searches said stub
11 set for the appropriate stub on the basis of the
12 designated stub name and client identifier and returns
13 the stub to the request source client.

15. An apparatus according to claim 13, wherein
2 said apparatus further comprises stub

3 generation means for generating, for each of types of
4 clients having different runtime environments, including
5 the request source client, a stub to be used together
6 with a skeleton used in the server apparatus at the time
7 of remote method invocation from the request source
8 client, and

9 upon receiving the stub request from the
10 client, the stub search interface returns to the request
11 source client the stub appropriate for the runtime
12 environment of the request source client, which is
13 generated by said stub generation means on the basis of
14 the designated stub name and client identifier.

16. An apparatus according to claim 14, wherein

2 said apparatus further comprises stub
3 generation means for generating, for each of types of
4 clients having different runtime environments a stub to
5 be used together with a skeleton used in the server
6 apparatus at the time of remote method invocation from
7 the client, and

8 when the corresponding stub is not present in
9 said stub set, the stub search interface returns to the
10 request source client the stub appropriate for the
11 runtime environment of the request source client, which
12 is generated by said stub generation means on the basis
13 of the designated stub name and client identifier.

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17. A computer-readable recording medium which
2 stores a program for executing stub search loading
3 processing of, in executing remote method invocation
4 from a plurality of clients to a server, downloading a
5 stub necessary in a request source client from the
6 server, wherein the program comprises:

7 a procedure code for sending a stub request
8 formed from a stub name and client identifier from the
9 request source client to the server;

10 a procedure code for, upon receiving the stub
11 request, returning from the server to the request source
12 client a stub to be used together with a skeleton used
13 in the server at the time of remote method invocation
14 from the request source client, on the basis of the
15 designated stub name and client identifier; and

16 a procedure code for receiving, at the request
17 source client, the stub transmitted from the server.

18. A medium according to claim 17, wherein the
2 program for executing the procedure code for returning
3 comprises

4 a procedure code for, in the server on the
5 basis of the designated client identifier, selecting one
6 of stub sets in which a stub to be used together with a
7 skeleton used in the server at the time of remote method
8 invocation from the request source client is prepared
9 for each of types of the clients having different

10 runtime environments,
11 a procedure code for selecting the stub having
12 the designated stub name from the selected stub set, and
13 a procedure code for transmitting the selected
14 stub from the server to the request source client.

19. A medium according to claim 17, wherein the
2 program for executing the procedure code for returning
3 comprises
4 a procedure code for, in the server on the
5 basis of the designated stub name and client identifier,
6 generating a stub to be used together with a skeleton
7 used in the server at the time of remote method
8 invocation from the request source client, and
9 a procedure code for transmitting the
10 generated stub from the server to the request source
11 client.

20. A medium according to claim 18, wherein the
2 program for executing the procedure code for returning
3 comprises
4 a procedure code for, in the server, when a
5 stub cannot be selected from the stub set, generating a
6 stub to be used together with a skeleton used in the
7 server at the time of remote method invocation from the
8 request source client on the basis of the designated
9 stub name and client identifier, and

10 a procedure code for transmitting the
11 generated stub from the server to the request source
12 client.

21. A computer-readable recording medium which
2 stores a program for executing processing of providing a
3 stub necessary in executing remote method invocation to
4 a request source client in response to a stub request
5 from the client, wherein the program comprises:

6 a procedure code for, in response to the stub
7 request from the request source client, returning to the
8 request source client the stub appropriate for a runtime
9 environment of the request source client on the basis of
10 the designated stub name and client identifier.

22. A medium according to claim 21, wherein the
2 program for executing the procedure code for returning
3 comprises

4 a procedure code for, in the server on the
5 basis of the designated client identifier, selecting one
6 of stub sets in which a stub to be used together with a
7 skeleton used in the server at the time of remote method
8 invocation from the request source client is prepared
9 for each of types of the clients having different
10 runtime environments,

11 a procedure code for selecting the stub having
12 the designated stub name from the selected stub set, and

13 a procedure code for transmitting the selected
14 stub from the server to the request source client.

23. A medium according to claim 21, wherein the
2 program for executing the procedure code for returning
3 comprises

4 a procedure code for, in the server on the
5 basis of the designated stub name and client identifier,
6 generating a stub to be used together with a skeleton
7 used in the server at the time of remote method
8 invocation from the request source client, and
9 a procedure code for transmitting the
10 generated stub from the server to the request source
11 client.

24. A medium according to claim 22, wherein the
2 program for executing the procedure code for returning
3 comprises

4 a procedure code for, in the server, when a
5 stub cannot be selected from the stub set, generating a
6 stub to be used together with a skeleton used in the
7 server at the time of remote method invocation from the
8 request source client on the basis of the designated
9 stub name and client identifier, and
10 a procedure code for transmitting the
11 generated stub from the server to the request source
12 client.